

Harbinger

JULY and AUGUST 2005

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They're faster than a speeding bullet! They can jump over a building in a single bound! They can lift boulders the size of a mountain! They are SUPER INSECTS!

When people speak of "animal champions," the biggest, strongest, or fastest animals on earth, they often name large animals such as elephants or cheetahs. Many people overlook the amazing creatures right under their noses or feet in most cases—insects! Even though insects are tiny animals, they are capable of some amazing feats.

Take the common flea. Inch for inch, the flea wins the first prize for the champion jumper. A flea can jump up to 13 inches which is equivalent to 200 times its body length. If you could jump 200 times your body length, you could easily jump over a 50-story building in just one bound. Not only do they leap high and far, fleas also jump fast. When a flea launches in the air, it is accelerating at speeds equivalent to 3,071 miles per hour. Fleas can accomplish these incredible jumps with a special structure called a pleural arch that is made of a stretchy protein called resilin that works just like a spring. When a flea bends its legs to jump, it squeezes the pleural arch. Once it stretches its legs to jump, the pressure on the arch is released which shoots the flea into the air.

Now, let's examine that insect we probably see everyday—the ant. Ants win the weight-lifting competition. An ant can lift an object 50 times its own weight, the same as a person lifting a car that weighs 4 tons. Ants will carry a load a great distance either bringing food to the anthill or excavating it. Multiple times a day, ants carry loads more than twice their weight a distance of 200 feet up and down trees and into and out of the anthill. That may not sound very far, but it is equivalent to a person climbing up and down Mount Everest while carrying another person. Ants and other insects are able to carry heavier loads than humans because of their skeleton. Insects have a hollow skeleton called an exoskeleton found on the outside of their bodies, rather than the solid, internal skeleton found in humans. A hollow skeleton is harder to bend and break than a solid one allowing ants to carry heavy weights.

But the astonishing insect acts do not stop there. I am sure we have all heard that annoying, buzzing sound when a mosquito flies nearby. The mosquito is not making that sound with its mouth, but rather with its wings. A mosquito flaps its wings at an astounding 600 times *per second*, so quickly that it produces a loud buzzing sound. This dwarfs the flapping speed of a hummingbird, the bird with the fastest wing flap, which averages 70-80 flaps per second. I encourage anyone to try flapping your arms as fast as you can for one second and see how many flaps you can make! My personal best was three flaps.

These examples are just a few of the amazing feats of insects. If you would like to learn more about these tiny "title-holders," join us for our annual *Insect-O-Rama* on Friday, August 26, from 7-9pm. Hopefully, the next time that you investigate an animal record, you will not forget our Super Insects!



~~Julie Eulinger

The View From The Bridge

Your summertime visit to the nature center may result in a few surprises as well as some loud and unexpected noises. The entrance road will undoubtedly resemble a construction zone temporarily rather than the gateway to a peaceful and tranquil experience as the City of Springfield's Public Works Department begins connecting the nearby neighborhood to the sanitary sewer system. But, the outcome will definitely be worth the relatively short-term hassle.

In 1994, City Council adopted a policy to "complete sanitary sewer system to cover 100% of the city." This environmental policy was adopted to protect the city's drinking water. In urban developments, even well maintained and properly designed septic systems have proven to be an unacceptable means of sewage disposal. Seepage from these systems often creates environmental health hazards and pollutes drinking water. Currently, 94% of city residents are on the sanitary sewer system leaving 6% of the city without public sewers. There are more than 1,000 miles of sanitary sewer pipe in Springfield and new sewers are being built at a rate of 20-25 miles a year.

The three biggest threats to water quality in Springfield include contaminated runoff, agricultural waste, and failing septic systems in areas where the geology prevents proper filtration of wastewater. These threats affect not only human health but also the overall health of the environment, including the waterways around the nature center.

City engineers agreed to reroute the original utility easement to prevent the removal of mature cedar trees near the entrance that currently provide perimeter screening from James River Freeway. The original route would also have disturbed landscape plantings and resulted in the removal of mature trees on city property which serve as a screen between the nature center and our nearest neighbor. The new utility easement will reduce the cost to the city and therefore to the neighborhood since the route will be shorter and no trees need to be removed or replaced. When the work is done, the disturbed area will be reseeded and restored to its original condition. The city has definitely gone to great lengths to make the disturbance as minimal as possible and we appreciate their efforts.

So, while your next visit to the nature center may be a little louder than usual, you can rest assured that these efforts are just one more step toward protecting the nature center specifically, and the Springfield area in general from the increasing effects of urbanization.

Linda
Linda F. Chorice,
Nature Center Manager

The Springfield Conservation Nature Center is located in southeast Springfield just west of US-65 off the James River Freeway (US-60). The area is open daily 8am to 9pm from March 1 to October 31, and 8am to 6pm during the remainder of the year. The building is open daily from 8am to 5pm year 'round. The building and area are closed on Thanksgiving, Christmas, and New Year's Day. The area is closed to pets, bicycles, roller blades, hunting, fishing, collecting, and alcoholic beverages. No fees are charged.

Phone: 417/888-4237 Fax: 417/888-4241 <www.mdc.mo.gov/areas/cnc/springfd>

The Nature Nook

Gift Shop



20%
Off

Singing Insects CD

Crickets, katydids, cicadas, and grasshoppers create the sounds of summer. This CD and poster can help you identify 20 common species of Missouri's "singing insects."

Discounted price: \$6.40 plus tax.

Heritage card discount does not apply.

Thank You

We wish to thank the Brent Davis family, Aidin and Lylie Harter, Liz Peak, Shannon Smalley, and Morgan and McKenzie Tuttle for their donations of natural objects; Brady Glass for the Mozarkite slab; and Pat and Jim Vawter for their donation of bird seed.

Thanks also to Hugh Duncan for the photographs; Pam and Shaina King for the poster; and Mike Skinner and Sandy Vaughn for their donation of books. For various other donations, thanks to Sandy Corby, Cornelia Bromer, Joan Mueller, Eric Johnson, and Garret Hull. Finally, we'd also like to thank the 94 people who donated a total of 260 hours to assist us with 6 different work projects in recognition of the 35th anniversary of Earth Day. (Individuals were listed on an Earth Day display during May and June.)

Temporary Displays

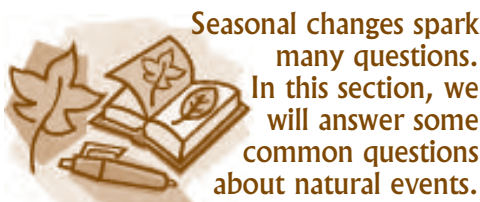
July

Junior Duck Stamp
Contest Artwork

August

Original Art from the
Finley Valley Fine Artists

Ask The Naturalist



Seasonal changes spark many questions. In this section, we will answer some common questions about natural events.

There are some strange looking "balls" that are growing on my oak tree. What are they and what should I do about them?

You are describing a gall. Galls are abnormal growths on plants most commonly caused by insects, midges, or mites. Tiny wasps are the usual cause of galls on oak trees. Although unattractive, most galls will not affect the health of the tree and treatment is not recommended.

I notice a large number of black insects with orange marks on their back on a tree in my yard. Many are on my foundation and coming inside my house. What are they?

In August and September homeowners may see huge numbers of boxelder bugs congregating on trees that are in the maple family, especially the silver maple and boxelder tree. They also tend to gather on the south side of structures, eventually making their way inside in search of



hibernation areas. Although not destructive, they can be a nuisance. For controlling populations of boxelder bugs consider removing trees that attract them. Pouring boiling water on clusters of bugs or the use of insecticides will kill the bugs. When using chemical control, be sure to check the insecticide container label or consult a professional about what to use.

I hear a loud droning coming from some trees behind my house. It is so loud it can be annoying at times. What is it?

The noise you hear is the mating "song" of the male cicada (sic-ay-da) which is produced by two drum-like membranes on the sides of the first abdominal segment. Two common cicadas in Missouri are the dog-day cicada and periodical cicada (**photo right**). Cicadas have a complicated life cycle that includes a nymph stage that feeds on sap from the roots of trees.



Chipping In . . .

James Dixon and Donna Legg

We've been fortunate to have some very talented naturalists as part of the nature center staff. James Dixon and Donna Legg are no exception. Unfortunately for us, however, they both have moved on to pursue career changes. Both have had great success in the way they've reached the public through the programs they have presented.

James Dixon first started as a naturalist in 1997, and was part of the volunteer program before that. As a naturalist, he has presented hundreds of programs to thousands of school kids and the general public. Some of his most noteworthy accomplishments include leading the Conservation TEEN Club on various monthly field trips such as hiking, canoeing, caving, and overnight camping trips. James has made a tremendous impact on the teenagers he's led and many are sure to continue some of these same activities into their adult lives. James has been a key component in planning and organizing special events such as *Eagle Days*, *Naturescaping*, and Friday Night Live programs. He even made a special appearance as the Incredible Hulk at one of our Halloween events. His trapping experience and exceptional people skills led him to accept a new position as a Wildlife Damage Biologist. James now works out of the Conservation Department's Southwest Regional Office.

Donna Legg began volunteering at the nature center in 1989, and later became an hourly naturalist in 1998. One of her most noteworthy accomplishments includes developing the award-winning *Babes In The Woods* program for 0-2 year olds and their caretakers. Donna has also reached thousands of children and adults through the programs she's presented to school groups and the general public. Her enthusiasm and hands-on approach to education have made her very popular with children and adults alike. Her outgoing personality and passion for teaching invite active participation from her audiences which made her programs very successful. Donna is currently pursuing different career opportunities.

Their repertoire of program props included Halloween costumes and early 1800s period attire for Lewis and Clark programs that demonstrated their willingness to teach even in unique ways. Their presentation styles and teaching techniques held the interest of even the youngest child.

We'll miss both of them *and* there will always be costumes available for special guest appearances. Thank you, James and Donna, for all that you have shared with us and the nature center visitors, and for chipping in.

Volunteer Milestones

Dan Liles	750 Hours
Mary Mangler	500 Hours
Drew Albert	300 Hours

Grab the entire family
and participate in some
creepy-crawly fun . . .

Insect-O-Rama

Friday, August 26
7-9pm

Insects—they fascinate us, they bug us, they surround us, they bite us—but what would a summer evening be like without them? Join insect specialists and enthusiasts for an evening devoted to discovering insects.

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Permit 274

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July Events



2 Hiked It . . . Liked It! Weekend Hike

Saturday, 9-11am

Enjoy a volunteer naturalist-guided hike. Families.



9 Hiking Club Saturday, 3-10pm

Avoid the heat of the day by taking an evening hike under the forest canopy at Swan Creek Territory with Volunteer Naturalist Doug Gilliam. Hike is five miles and rated as difficult. Meet at the nature center and carpool. Wear comfortable hiking shoes, pack a sack dinner, and bring plenty of water. Ages 18-adult. Registration required. *(In order to accommodate more participants, please limit Hiking Club trips to one per month.)*

10 Primitive Skills Series Making Cordage

Sunday, 1-3pm

Volunteer Naturalist and primitive skills specialist Don Brink demonstrates how to weave plant fibers into cordage. Try your hand at this age-old skill and learn about the plants primitive man used to make cordage. Stop by anytime.

12 Babes In The Woods Celebrates Summer

Tuesday, 10-10:45am or 6-6:45pm

Summer breezes make us feel fine as Volunteer Naturalist Tracy Richter leads you and your favorite 0-2 year old on a guided nature stroll. Registration required.

Tree Pest Clinic

Tuesday, 10am-1pm

Do your trees have disease or insect problems? Bring infected twigs (at least 15" long), branches, or leaves to Urban Foresters for identification and a solution to your tree problems. Stop by anytime.

14 Medicinal And Edible Plants Of The Ozarks

Thursday, 7-8:30pm

Join Bob Liebert, owner of Teter Creek Herbs and author of *Common Medicinal Herbs Of The Ozarks*, to learn how Native Americans and early pioneers relied on plants for curing their ailments and feeding their families. Ages 12-adult. Registration required.

15 Bored? Measure A Board Friday, 10-11:30am

Join Volunteer Naturalist Earl Niewald and use the tools of a forester to determine the volume of wood in a tree and other calculations. Meet at Living Memorial Park. Ages 9-12. Registration required.

REGISTRATION

Call the nature center at **417/888-4237** on or after July 1 to register for July programs requiring registration. If you are unable to attend a program, please call to cancel so that someone on the waiting list may attend.

17 Venomous Snakes Of Missouri Sunday, 1-2pm

You've heard the tales about them, but now's your chance to hear the truth. We'll explore the myths and realities of pit vipers. Families.

Venomous Snakes On Display Sunday, 2-4pm

Live specimens will be on display courtesy of Finley Valley Serpenterium. Stop by anytime.

18 Conservation TEEN Club Overnight Bat Research Trip Monday, Noon to Tuesday, Noon

Don't miss this opportunity to observe ongoing field research. Dr. Lynn Robbins, mammalogy professor at SMSU, will be capturing, tagging, and tracking local bats. After late-night observations, we'll spend the night indoors at the nearby SMSU Bull Shoals field station. Ages 12-17. Registration required.

21 Hiking Club Thursday, 6-9:30pm

Enjoy an evening hike at Little Sac Woods Conservation Area with Volunteer Naturalist Mike Mihalik. Meet at the nature center and carpool. Hike is an easy three miles. Ages 18-adult. Registration required. *(In order to accommodate more participants, please limit Hiking Club trips to one per month.)*

23 For Adults Only Spelunker Spree Saturday, 9am-4pm

It's time to get down and dirty—down underground, that is. Exploring caves (or spelunking) is always an adventure. Be part of the fun by exploring two caves at nearby Fuson Conservation Area. Inquire about special instructions. Ages 18-adult. Registration required.

24 Summer Hummers Sunday, 5-6:30pm

Join hummingbird bander Sarah Driver as she shares her knowledge about Missouri's smallest bird and attempts to capture and band some. Families. Registration required.

26 Conservation Kids' Club Ready . . . Aim . . . Fire! Tuesday, 6-7pm or 7-8pm

Kids, here's your chance to try your hand at some cool outdoor shooting skills. Learn how to shoot a pellet gun, pop a balloon target by using a bow and arrow, and test your sharp-shooting skills with a laser shot video game. All safety equipment and instruction will be provided to introduce you to these exciting activities. Ages 7-12 only. Please, no younger siblings. Registration required.

27 Ready . . . Aim . . . Fire! Wednesday, 6-9pm

Bring your family and drop by anytime to try your hand at learning some new outdoor shooting skills. Kids (ages 6 and above) and adults can try archery, shooting pellet guns, and a laser shot video game. Additional activities will be available for younger children. Instruction and safety equipment will be provided to safely introduce your family to the fun of outdoor shooting skills. Families.

30 The Art Of Woodcarving Saturday, 10-11am

Try your hand at woodcarving with members of the Southern Missouri Woodcarving Artists as they teach carving techniques and show how to transform wood into works of art. Ages 12-adult. Registration required.

Woodcarving Demonstration Saturday, 10am-4pm

Drop by anytime to visit with members of the Southern Missouri Woodcarving Artists as they share information with the "wood-be" carver, demonstrate carving techniques, show works in progress, and sell some of their art pieces.

31 Woodcarving Demonstration Sunday, 10am-4pm

Drop by anytime to visit with members of the Southern Missouri Woodcarving Artists as they share information with the "wood-be" carver, demonstrate carving techniques, show works in progress, and sell some of their art pieces.



**Ms. Ladybug is on vacation.
She will return in August for
another story time.**

Little Acorns

Little Acorns programs are for children 3-6 years and are 45-minutes in length. Please limit **Little Acorns** programs to one per month. Registration required.

Animal Wrappers

Scales, slime, feathers, and fur—learn how each animal wrapper is suited for how an animal lives.

**Saturday, July 9, 11am or 1pm
Tuesday, July 12, 11am**

Miniature Music Makers

Grasshoppers, crickets, and katydids provide summer noises. Join Volunteer Naturalist Nancy Ryan and learn how and why they make "music" and make a little insect music yourself.

Friday, July 22, 11am or 1pm

Turtlemania

Don't be stuck in your shell all summer! Come explore the world of snappers, sliders, stinkpots, and more!

**Thursday, July 28, 1pm or 6pm
Saturday, July 30, 11am**

VIDEOS ARE SHOWN
EVERY SUNDAY
FROM 2-3pm.

August Events



4 Hiking Club Thursday, 6-9pm

Ozark Greenways has established miles of trails throughout Springfield. On this hike we'll travel three easy miles along the South Creek Greenway. Meet at the nature center and carpool. Ages 18-adult. Registration required. *(In order to accommodate more participants, please limit Hiking Club trips to one per month.)*

6 Hiked It . . . Liked It! Weekend Hike Saturday, 9-11am

Enjoy a volunteer naturalist-guided hike. Families.



10 Story Time With Ms. Ladybug Wednesday, 11-11:30am

Join Volunteer Naturalist Linda Brown as she reads a nature story and shares activities with your 2-6 year olds.



12 Conservation TEEN Club Underwater Snorkeling Adventure Friday, 11am-5pm

Come beat the heat and experience a fish-eye view of an Ozark creek. No prior snorkeling experience is necessary. Transportation and lunch will be provided. Ages 12-17. Registration required.

12 Hunter Education Friday, 6-9pm and Saturday, 8am-5pm

This 10-hour course is required for anyone born after January 1, 1967, who wants to hunt with firearms in Missouri. This course is continued on Saturday from 8am to 5pm (lunch break given—lunch not provided). You must pass a written test to be certified. Ages 11-adult. *Call today to register.*

13 Hiking Club Saturday, 8am-2pm

Beat the heat in the cool waters of Bull Creek. Volunteer Naturalist Mike Mihalik will lead a two-mile creek wade in search of aquatic life. Wear shoes and clothes you can get wet. Bring water and pack a sack lunch. Meet at the nature center and carpool. *(In order to accommodate more participants, please limit Hiking Club trips to one per month.)*

REGISTRATION

Call the nature center at **417/888-4237** on or after August 1 to register for August programs requiring registration. If you are unable to attend a program, please call to cancel so that someone on the waiting list may attend.

20 Conservation Crew Saturday, 8am-3pm

Help us keep Missouri's streams clean. This month we'll do a creek cleanup by wading a portion of the Finley River by Linden Lure and a portion of the James River by MDC Joe Crighton Access. Wear clothes and shoes that you can get wet and bring an extra set of dry clothes. Lunch and drinks will be provided. Meet at the nature center and carpool. Ages 18-adult. Registration required.

21 Primitive Skills Series Primitive Traps And Trapping Sunday, 1-3pm

Volunteer Naturalist and primitive skills specialist Don Brink teaches how to identify animal tracks and patterns and how to solve the mystery of where an animal was going, what it was doing, and other clues they leave behind to give us insight into their secretive lives. Ages 12-adult. Registration required.

Summer Hummers Sunday, 4-5:30pm

Both adult hummingbirds and their young are visiting feeders prior to fall migration. Join hummingbird bander Sarah Driver as she shares her knowledge about Missouri's smallest bird and attempts to capture and band some. Families. Registration required.

Banding Summer's Hummers Sunday, 5:30-7pm

Stop by and watch hummingbird bander Sarah Driver as she captures and bands these amazing birds. Families.

25 Babes In The Woods Celebrates Fathers

Thursday, 10-10:45am or 6-6:45pm

Grab your stroller and join the fun! You and your favorite Little Person (0-2 years old) will be introduced to the outdoors and the fascinating bugs of summer by Volunteer Naturalist Tracy Richter. Registration required.

The Conservation Kids' Club will not be meeting this month. Bring your entire family and join us for Insect-O-Rama.



26 Insect-O-Rama Friday, 7-9pm

Insects—they fascinate us, they bug us, they surround us, they bite us—but what would a summer evening be like without them? Join insect specialists and enthusiasts for an evening devoted to discovering insects. Grab your entire family and participate in some creepy-crawly fun! All ages.

30 For Adults Only In Search Of . . . Tuesday, 6-10pm

Wildlife beat the summer doldrums by avoiding the heat of the day and becoming more active in the evenings. Tonight, we'll carpool to a few local areas in search of amphibians, reptiles, and any other active critters. Meet at the nature center and bring a flashlight and water. Ages 18-adult. Registration required.

Little Acorns

Little Acorns programs are for children 3-6 years and are 45-minutes in length. Please limit **Little Acorns** programs to one per month. Registration required.

Calling All Cicadas!

The droning sound of male cicadas provides background music to summers in the Ozarks. Spend some time learning about these fascinating and loud insects before they quietly disappear. *Registration begins July 15.*

Thursday, August 4, 10am or 1pm
Saturday, August 6, 10am or 1pm

Bee Bustle

What are those bees up to as they bustle about all day? Buzz on in and learn about the "buzzy" daily lives of bees inside and outside the hive.

Thursday, August 11, 11am
Saturday, August 13, 11am

Busy Beavers

Although not seen very often at the nature center, beavers do live here. Come and find out where and how these amazing animals live!

Tuesday, August 23, 11am
Wednesday August 24, 1pm or 6pm

VIDEOS ARE SHOWN
EVERY SUNDAY
FROM 2-3pm.



Visit the Conservation Department's building at the Ozark Empire Fair from July 29 to August 7. Enjoy special exhibits and the "Show-me Missouri Fish" mobile aquarium.